

with that mentioned in Genesis as turning every way to guard the tree of life; he tells us that the Bel whom Milton saw was Cromwell and the dragon the serpent of English oppression; and that to the Jews the power of Christendom came to be represented as the reign of Bel. But out of all this he obtains nothing further than an identification of Bel with Michael in the Apocalypse. This is sufficiently provoking when we remember the astronomical and cosmical facts which underlie the story. Were we possessed of no further evidence than that afforded by the great pyramid, we should be at no loss to perceive the anxious care with which the heavenly bodies were observed by the ancients. A star-group which specially claimed their attention was the Pleiades. The Pleiades above the horizon were the celestial, and below it the infernal gods. The period of their culmination, typifying appropriately a deliverance from Hades of the departed, has been dedicated, throughout the Old and New Worlds, to the worship of the manes of ancestors. This festival survives in our All Saints Day the accompanying feasts of Hallow-e'en and All Souls, originating in the imperfection of ancient observations. Wanting instruments of sufficient accuracy to determine the exact time of culmination, the ancients, by extending their devotions over three days, secured a due celebration of the sacred epoch. One act of this solemn period was lighting the sacred fire. The *Times* of November 4 records that Her Majesty was graciously pleased to assist at that holy rite, and witnessed the burning in effigy of a witch, personification of the evil power. This fire, the Bealltainn or Beltin, was the fire of Bel, and celebrated his ascension to the zenith, whilst his adversary, the dragon, was cast down to the nadir. In the rising of the Pleiades, at the time that Scorpio sank below the horizon, we may see the victory of Bel over the Dragon—a victory always negatived, as autumn gave place to winter, and ever renewed as winter was succeeded by spring, the alternating success of the combatants being fitly recorded in a joint worship. When we remember the identification of the Cherubim with the Bull, and of the Seraph with Scorpio, we perceive that their continual cry is but another expression of the eternal struggle. Again, in a mystic sense, we must remember that in Babylonian mythology Bel was Saturn, the oldest and chief god, the great spirit of antiquity, the ancient of days, God of Heaven, Life God, Lord of the Cycles, Chronos, Eternal God. His emanation was light, and in his character of sun god he was the creator—Demiurgus and Logos—and in this phase he combats and overcomes Tiamat or evil chaos, as the heavenly spirit in Genesis broods over the abyss of darkness—this idea is reproduced in another Babylonian legend, in which Bel cuts the woman Omorka, or primitive matter, in halves, and forms heaven and earth of the pieces. We can readily understand that on the promulgation of the doctrine that the gods were originally men whose virtue had raised them to the skies, the heroic deeds of Bel were related as those of a giant over natural foes, and that the first of the gods became the first man, equivalent to Adam. And so we find that, in company with his wife Beltis (Eve), he preceded the antediluvian rule of the ten zodiac gods. But Bel was, as the highest abstraction of deity, himself hermaphrodite,

and in that sense active heaven and passive earth—light and darkness. He is thus the dragon-slayer and the great serpent itself, a fact which will account for the two personifications being the objects of a joint worship equivalent to the ling-yoni worship of India.

To the getting up of the work we have nothing to object except as regards the illustrations, which, though fair, scarcely reach that standard which the excellence of the text deserves. Debited, however, with any faults which it may contain, a large balance remains to the credit of its learned author, and if he has not succeeded in producing an exhaustive treatise upon his subject, his volumes are undoubtedly a most valuable contribution to Demonology, and we trust they may meet with the success to which they are unquestionably entitled.

#### OUR BOOK SHELF

*Fauna der Gaskohle und der Kalksteine der Permformation Böhmens.* Von Dr. Ant. Fritsch, Band i. Heft i. (Prague, 1879.)

THE accomplished professor of zoology, in the university of Prague, publishes in this part, which consists of ninety-two folio pages and twelve beautiful plates, descriptions of the sections of the rocks whence the fossils were derived, lists of the fossils, and a careful *résumé* of the literature of the extinct amphibia, which are usually jumbled up together under the term Labyrinthodontia. The most valuable part of the work is an elaborate description of the new forms which abound in the strata overlying the Silurians, in a region where the Pilsner district may be considered typical. The Gaskohle there yielded a very rich fauna and flora of twenty-one new labyrinthodont species, some Orthacanthoids and species of Xenacanthus, Acanthodes, and Palaeoniscus; besides Estheria, portions of Orthoptera and Julus. The plants named by O. Feistmantel were numerous and the few typical Permian forms are:—*Equisetites contractus*, *Neuropterus imbricata*, *Odontopterus obtusiloba*, and *Schlotheimi*, *Asterocarpus Geinitzii*, *Schützia anomala*, and *Walchia piniformis*. With these are Sigillaria, Stigmaria, Volkmannia, Calamites, Lepidodendra, &c. The new amphibian genus *Branchiosaurus* is represented by five species in the whole district, Sparodus by two, Hyponomus by the same number, and there is a form called Dawsonia. In noticing the family Branchiosauridae Dr. Fritsch draws attention to the necessity of allowing the name Stegocephali to replace that of the Labyrinthodontia for the order, as the labyrinthic condition of the teeth is not seen in skulls in which the supra-occipitals are two distinct ossifications, where there are post-orbital and supra-temporal bones, as well as well-developed epiotics, a sclerotic ring being present. The family just alluded to are broad-headed salamander-looking things with smooth teeth with large cavities. They have short ribs, vertebrae with relics of the chorda, and the parasphenoid is in the shape of a broad plate, which narrows in front. The skin is covered with delicate ornamented scales, and the remains of branchial rays are present. One of these, *Branchiosaurus salamandroides*, already described by the author, is carefully illustrated, and is a form well worth studying. Its osteology is plainly given, and the remnants of the breast plate and of the shoulder girdle and pelvis also. The new genus Sparodus has remarkably broad bones, which may be vomers, which carry numerous conical teeth, and the fore part of the parasphenoid is short and broad, and the palatines have a row of teeth on them. Allied to *Hylerpeton*, Owen, and *Batrachiderpeton*, Hancock, Sparodus has about seventeen teeth in the lower jaw

on either side and the front ones are double the size of the others. The genus *Dawsonia*, allied more or less to *Hylonomus*, Dawson, is also one of those broad frog-headed salamandroid-looking branchiate amphibia. The sculpturing of the head plates is remarkable, and there appears to be a new bone interpolated behind the post-frontal. Beneath, the vomers have teeth, and so have the long part of the pre-sphenoid, the outer portions of the pterygoids, the palatines, superior-maxillaries, and the pre-maxillaries. The clearly written book is made all the more valuable by the introduction of Miall's reports to the British Association on the labyrinthodonts, and it is pleasing to note the author's graceful recognition of the assistance, he has had in his work from British paleontologists.

P. M. D.

#### LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*

[*The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.*]

An Account of some Marine Animals met with en route to the Cape September 21, 22

I AM commanded by my Lords Commissioners of the Admiralty, to transmit herewith a copy of a letter from the commanding officer of H.M.S. *Crocodile*, giving an account of some marine animals met with en route to the Cape, which may be of some interest to the readers of NATURE.

Admiralty, November 10

ROBERT HALL  
H.M.S. *Crocodile*, Simon's Bay  
September 30, 1879

SIR,—I think the following statement may be of some scientific interest, and have the honour to request that it may be attached to my letter of proceedings of this day's date.

Between the Lat. of  $\{ 5^{\circ} 53' \}$  S., and Long.  $\{ 5^{\circ} 44' \}$  E., and between the hours of moon setting and daylight on the nights of September 21 and 22, the condensers were continually heating, and the vacuum gauge suddenly dropping to zero.

On examination of strainers, it appeared that the inlet to the sea-water was choked with a marine animal to an extent that necessitated stopping and clearing four times on the night of the 21st inst., and five times on the night of the 22nd inst.

On referring to Dallas's "Natural History," the description given of the Pyrosoma, class Tunicata, order Ascidia, corresponded in all apparent particulars to the specimens I fished up from alongside and took from off the strainers. Those on the strainers were, of course, much flattened by the pressure, and those that had passed through were much attenuated.

The luminosity of the creatures was very great, and of a most brilliant sapphire colour. I have, &c.,

(Signed) F. PROBY DOUGHTY,  
Captain

To Commodore Richards, A.D.C., Cape of Good Hope

#### Easter Island

As the reviewer of Australasia in NATURE, vol. xx. p. 598, I must ask space for a few further words with regard to Rapanui. Mr. Albert J. Mott draws conclusions with regard to the ancient navigation of the Pacific Ocean and a former condition of high civilisation of the erectors of the stone images, which will not be admitted by any scientific ethnologist. The difficulties attending the erection by savages, or very slightly civilised people all over the world, of large stones has been greatly overrated. In the case of the stone images of Easter Island, the latest observer, M. A. Pinart, who has paid great attention to this very question and published the fullest account of the matter, together with a series of excellent illustrations, finds no difficulty in accounting for their erection. He writes as follows:—"L'ensemble de ce vaste atelier de statues gigantesques les unes entièrement terminées les autres à l'état d'ébauche et

en voie d'exécution nous permet de nous rendre compte de la façon dont le travail était accompli, et de la manière dont elles étaient érigées et mise en place après leur complet achèvement. L'exécution de ce travail qui de prime abord paraît considérable, qui a tout étonné les voyageurs et suggère de nombreuses hypothèses, est cependant d'une grande simplicité."

M. Pinart then goes on to explain how the sculptures were always cut out on rocks considerably inclined, and slid down hill to the place assigned, where they were tilted by means of an inclined plane of earth and stones built up, into holes dug deep enough to bury all but the head of each statue. I must refer readers wishing for more detailed information to M. Pinart's paper, "Voyage à l'Île de Paques," *Le Tour du Monde*, 1878, p. 225, No. 927, for drawing my attention to which I am indebted to the librarian of the Royal Geographical Society, Mr. Rye.

The population of Easter Island was by some earlier voyagers estimated at as high as 1,500. It may have been greater, and as many as 500 men would certainly not be required for the erection of any of the images. There was undoubtedly a good deal of wood in the island in old times, and thus rollers and levers would be made use of. The trees of the island have now been exterminated by the inhabitants. Palmer speaks of a peculiar gesture of the modern Rapanui natives which he compares with certain features in the images. It is the opinion of experts that the general appearance of the sculptured faces is decidedly Polynesian, as far as mode of artistic treatment is concerned. Mr. Mott's conclusion that the existence of these images proves that a nation formerly existed which navigated ships to Easter Island at regular intervals, and kept the place going as a colony, will be regarded as simply absurd by any one who knows anything of the science of navigation. So small and so isolated an island as Rapanui could only be reached by navigators who had a very advanced knowledge of astronomy and navigation, and were provided with instruments of great precision, and who had determined the position of the island on maps with exact correctness. No Chinese, Japanese, Indian, or Arab navigators could have hit on the island except by accident. An exact determination of longitude, as well as of latitude is involved in the matter. A mere knowledge of the compass with even as good information concerning its variations as we now possess would not avail. The island was discovered by Reggeveen on April 5, 1722; in 1764 Commodore Byron, with two ships, sought for the island in vain; in 1766 Bougainville, with two French ships of war, sought for it also in vain; in 1767 Capt. Cartaret made the same attempt with a similar result. It was only on March 11, 1774, that Capt. Cook found the island again, and Mr. Mott would have us believe that persons who were by the undoubted evidence of their artistic capabilities and method of treatment of the human figure in sculpture, savages, were able to accomplish, as often as they wished, a feat of navigation which baffled some of the best European navigators of the eighteenth century. Even at the present day so difficult is the determination of longitude to persons not specially trained as expert navigators that the island of Bermuda, and even the Virgin Islands have been more than once reported as "gone down" by merchant captains who could not find them.

With regard to Mr. Mott's "gentle protest" against my statement that "the accepted scientific position is that primitive man was savage," no protest, whether gentle or otherwise, will alter the fact that such is the case; but it is quite superfluous to enter into a discussion here on the general theory of evolution, in accordance with which that position is maintained.

H. N. MOSELEY

#### Silurian Fossils in the Curlew Mountains

I BEG to state that the paragraph which occurs in NATURE, vol. xx. p. 641, that Silurian fossils have been found in beds amongst the Curlew Mountains "supposed to be old red sandstone," is not quite correct. It was very well known in this office that the beds containing the fossils were of the Silurian formation—though erroneously included within the boundary line of the old red sandstone in the Survey Map, sheet 76. Since the map was engraved, the district to the north and east has been surveyed, and a large fault was discovered, ranging in the direction of the spot where the Silurian fossils have been found. The occurrence of this fault explains the presence of the beds with Silurian fossils within the area of the tract coloured as old red sandstone. There is, therefore, nothing in the announcement in your paper of the slightest novelty, and I have only to state that if the writer